Trend Study 17-54-00

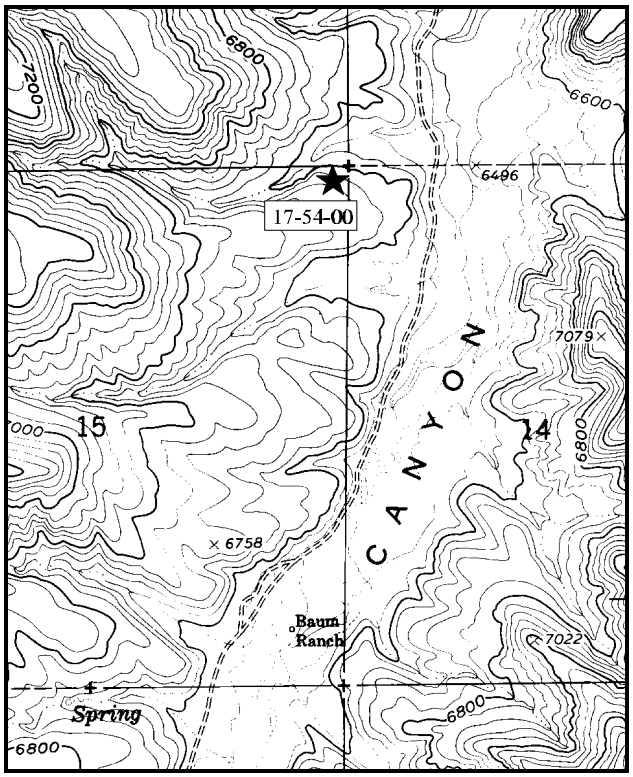
Study site name: Peatross Ranch . Range type: Pinyon-Juniper .

Compass bearing: frequency baseline 167°M .

Footmark (first frame placement) 5 feet, footmarks (frequency belts) line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

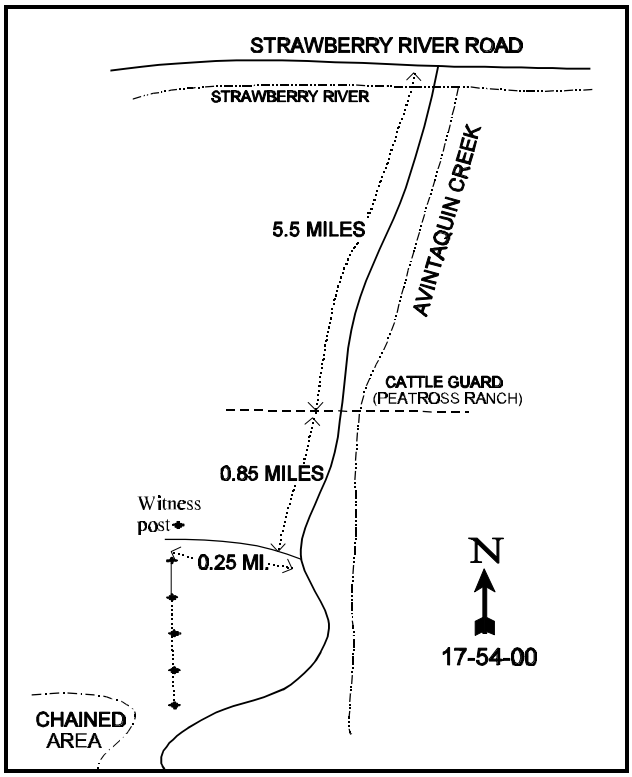
LOCATION DESCRIPTION

From the Strawberry Pinnacles, turn south off the Strawberry River Road. Cross Red Creek then bear left at the fork towards Avintaquin Canyon. Go south up Avintaquin canyon for about 5.3 miles to a fence and cattle guard. Proceed an additional 0.85 miles to a small canyon to the west. Walk up the faint road to the west for 0.25 miles to a witness post. From the witness post walk 200 yards at a bearing of 200°M to the 0-foot stake. The 0-foot stake is about 30 feet south of a trail that runs east-west. The baseline run up the hill in the P-J and is are marked by green steel fenceposts approximately 12-18 inches in height.



Map Name: Avintaquin Canyon

Township 5S , Range 8W , Section 15



Diagrammatic Sketch

UTM 4433508 N, 519130 E

DISCUSSION

Trend Study No. 17-54 (14-1)

The Peatross Ranch trend study is located approximately one-half mile north of the Peatross Ranch headquarters on private land in Avintaquin Canyon. The area is deer winter range at an elevation of 6,680 feet. The range type is pinyon-juniper woodland with a grass-mixed browse understory. Slope is approximately 30% and exposure is to the north. Grazing from both livestock and deer has been moderately heavy in the past. The site is intersected by cattle trails yet use by livestock appears heavier on top of the hill in a nearby chained area. Quadrat frequency of deer pellet groups was estimated at 35% in 1995. A pellet group transect read along the study site baseline in 2000 estimated 12 deer and 20 cow days use/acre (30 ddu/ha and 49 cdu/ha). One elk pellet group was also sampled.

Soils are loose and moderately deep. Effective rooting depth is estimated at over 17 inches. Soil texture is a clay loam with a neutral soil reaction (pH of 7.2). Phosphorus is limited at only 2.1 ppm. Values less than 10 ppm can limit normal plant growth and development. Limestone is the principal parent material. The soil is moderately rocky and soil movement is evident on the steeper terrain. A profile stoniness index shows rock to be uniformly distributed throughout the profile. Vegetative cover is almost evenly divided between grasses, forbs and browse.

Browse composition and density is poor. The site is dominated by pinyon and juniper trees. Canopy cover of pinyon and juniper was estimated at 31% in 1995 and 32% in 2000. Point-center quarter data from 2000 estimated 21 pinyon and 26 Utah and Rocky Mountain juniper trees/acre. Average diameter of pinyon is 6 inches while diameter of juniper averages nearly 14 inches.

Of the 8 understory browse species encountered, only mahogany and snowberry are palatable and in sufficient densities to provide some useful forage. The key browse species, true mountain mahogany, had a stunted, very heavily hedged appearance in 1988, which showed no evidence of seed production. During the 1995 reading, only a few larger plants were producing seed. Most plants average 2 feet in height. Density was at 999 plants/acre in 1982. Of these, 33% were heavily hedged. In 1988, 1,666 young plants/acre were estimated. It is likely that some of these young plants were actually, small statured mature shrubs. Utilization was reported heavy on 76% of the mahogany in 1988, with poor vigor found in 4% of the population. A more balanced population was found in 1995 when 20 seedling, 60 young, 840 mature and 20 decadent plants/acre were estimated. A much larger, more representative sample was used in 1995. Dead plants, first counted in 1995, totaled only 40 plants/acre. This would indicate a fairly stable population. Utilization continued to be heavy with 63% of the mahogany displaying heavy use. Data from 2000 estimate a similar density to 1995 with similar use, good vigor and low decadence.

Snowberry has an estimated density of 760 plants/acre in 2000. They show only light use. Other, less desirable browse encountered on the site include: mountain low rabbitbrush, corymbed eriogonum, broom snakeweed and gray horsebrush.

The herbaceous understory accounted for 69% of the vegetative cover in 1995 and 63% in 2000. Nine perennial grass species were encountered in 2000. Dominant species include: bluebunch and slender wheatgrass, Carex, Salina wildrye, Indian ricegrass and needle-and-thread grass. The forb composition is diverse but dominated by less desirable species, stemless hymenoxys, mat penstemon and desert phlox.

1982 APPARENT TREND ASSESSMENT

Range trend appears to be declining in all categories. Loss of soil is unacceptably high, the browse species appear to be in a state of decline, undesirable shrubs are probably increasing and forb composition is unsatisfactory. Only the grass component seems fairly stable, but even it could be threatened by an increased presence of Salina wildrye. This plant dominates many similar sites in the Avintaquin Canyon area.

1988 TREND ASSESSMENT

Ground cover characteristics have declined slightly. Basal vegetative cover declined from 12% to 10% and percent bare ground increased from 11.5% to 16%. Trend for browse is slightly improved, but density and composition are still poor. The key browse species, true mountain mahogany, has increased in density but is more heavily hedged. There were some shifts in the grass composition. Slender wheatgrass and Salina wildrye are more prevalent. However, frequency of grass is unchanged since 1982. Frequency of forbs increased slightly although the increase can be attributed mainly to low value species such as stemless hymenoxys, desert phlox and rose pussytoes.

TREND ASSESSMENT
soil - down slightly (2)
browse - slightly improved but composition and density are still poor (4)
herbaceous understory - slightly improved but dominated by low value increasers (4)

1995 TREND ASSESSMENT

Ground cover characteristics have improved since 1988. Percent litter cover increased from 37% to 44% and percent bare ground declined from 16% to 14%. Trend for soil is slightly up. Browse trend for the key species, true mountain mahogany, is stable with only 2% decadency and heavy use reported on 63% of the population, down from 76% in 1988. One would not expect a much higher density for mahogany with pinyon-juniper canopy cover exceeding 30%. Trend for the herbaceous understory is down for both grasses and forbs. Sum of nested frequency for grasses declined by 28% since 1988 with 4 of the 8 perennial grasses sampled declining significantly in nested frequency. Sum nested frequency of perennial forbs also declined. Much of the herbaceous understory decline can be attributed to the prolonged drought and competition with the pinyon-juniper canopy cover.

TREND ASSESSMENT
soil - slightly up (4)
browse - stable (3)
herbaceous understory - down (1)

2000 TREND ASSESSMENT

Trend for soil is stable. Relative percent cover of bare ground, litter and vegetation have remained similar to 1995 estimates. In addition, the ratio of protective ground cover (vegetation, litter and cryptogams) to bare ground is nearly the same. Trend for the key browse species, true mountain mahogany, is also stable. Use is heavy, vigor normal on most plants and percent decadence is low. The dominance of pinyon and juniper trees is one of the main negative aspects of this site. Overhead canopy cover is currently estimated at 32%. These trees will eventually crowd out the more desirable understory species. Trend for the herbaceous understory is mixed. Sum of nested frequency of perennial grasses has increased slightly due primarily to the presence of bluebunch wheatgrass which was not previously found. It appears that there were identification problems between bluebunch wheatgrass, Salina wildrye and slender wheatgrass in the past. Sum of nested frequency of perennial forbs declined. Overall the herbaceous trend is considered stable.

TREND ASSESSMENT
soil - stable (3)
browse - stable (3)
herbaceous understory - stable (3)

HERBACEOUS TRENDS --
Herd unit 17 , Study no: 54

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
G	Agropyron dasystachyum	$_{b}$62	$_{a}$6	$_{bb}$40	38	25	2	19	.03	.64
G	Agropyron spicatum	$_{a}$-	$_{a}$-	$_{b}$113	-	-	-	43	-	4.10
G	Agropyron trachycaulum	$_{c}$191	$_{b}$119	$_{a}$82	38	69	44	39	2.46	2.22
G	Carex spp.	$_{b}$99	$_{a}$75	$_{a}$58	31	48	32	28	1.95	1.68
G	Elymus salina	53	81	70	-	19	30	23	1.48	.85
G	Koeleria cristata	$_{b}$55	$_{a}$28	$_{a}$14	44	23	9	6	.44	.34
G	Oryzopsis hymenoides	$_{b}$92	$_{b}$64	$_{a}$37	52	38	30	18	.58	.94
G	Poa fendleriana	$_{a}$1	$_{a}$-	$_{b}$21	-	1	-	7	-	.13
G	Sitanion hystrix	-	2	-	-	-	2	-	.01	-
G	Stipa comata	$_{b}$88	$_{b}$86	$_{a}$67	57	37	37	25	1.00	.91
Total for Annual Grasses		0	0	0	0	0	0	0	0	0
Total for Perennial Grasses		641	461	502	260	260	186	208	7.97	11.84
Total for Grasses		641	461	502	260	260	186	208	7.97	11.84
F	Antennaria rosea	$_{b}$78	$_{a}$4	$_{a}$14	11	37	3	8	.01	.14
F	Androsace septentrionalis (a)	-	10	2	-	-	5	1	.02	.00
F	Arabis spp.	-	1	-	-	-	1	-	.00	-
F	Astragalus convallarius	1	4	4	3	1	1	2	.01	.06
F	Astragalus purshii	$_{b}$13	$_{b}$7	$_{a}$-	9	6	4	-	.04	-
F	Aster spp.	-	5	1	-	-	2	1	.03	.00
F	Castilleja chromosa	$_{b}$19	$_{b}$24	$_{a}$4	-	11	12	3	.18	.06
F	Caulanthus crassicaulis	$_{b}$12	$_{a}$-	$_{a}$-	-	5	-	-	-	-
F	Calochortus nuttallii	$_{a}$-	$_{b}$8	$_{a}$-	-	-	4	-	.02	-
F	Chenopodium fremontii (a)	-	$_{b}$15	$_{a}$-	-	-	7	-	.25	-
F	Chenopodium leptophyllum (a)	-	2	-	-	-	2	-	.01	-
F	Cryptantha spp.	$_{b}$60	$_{ab}$45	$_{a}$23	-	30	25	13	.30	.53
F	Descurainia pinnata (a)	-	$_{b}$15	$_{a}$3	-	-	6	1	.72	.00
F	Eriogonum alatum	-	3	-	-	-	1	-	.00	-
F	Erigeron pumilus	$_{a}$-	$_{a}$-	$_{b}$16	20	-	-	10	-	.15
F	Eriogonum umbellatum	$_{b}$20	$_{ab}$13	$_{a}$5	-	13	6	3	.08	.06

Type	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	Heterotheca villosa	-	-	-	4	-	-	-	-	-
F	Hymenoxys acaulis	$_{c}$100	$_{b}$50	$_{a}$30	42	41	21	16	2.42	.27
F	Linum lewisii	$_{b}$26	$_{b}$27	$_{a}$10	13	12	13	4	.14	.02
F	Machaeranthera canescens	4	-	-	-	3	-	-	-	-
F	Machaeranthera grindelioides	18	31	29	8	10	17	21	.27	.15
F	Penstemon caespitosus	$_{a}$-	$_{c}$77	$_{b}$36	-	-	35	19	1.12	.27
F	Phlox austromontana	$_{b}$166	$_{a}$108	$_{a}$125	-	73	48	58	1.59	3.60
F	Phlox longifolia	3	3	-	-	1	2	-	.01	-
F	Schoencrambe linifolia	-	3	-	-	-	1	-	.04	-
F	Sphaeralcea coccinea	$_{b}$28	$_{a}$3	$_{a}$-	10	10	1	-	.00	-
F	Taraxacum officinale	1	3	-	1	1	3	-	.04	-
Total for Annual Forbs		0	42	5	0	0	20	2	1.01	0.00
Total for Perennial Forbs		549	419	297	221	254	200	158	6.38	5.34
Total for Forbs		549	461	302	221	254	220	160	7.39	5.35

Values with different subscript letters are significantly different at % = 0.10

BROWSE TRENDS --
Herd unit 17 , Study no: 54

Type	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Artemisia tridentata vaseyana	1	0	-	-
B	Cercocarpus montanus	29	28	1.96	1.02
B	Chrysothamnus depressus	27	11	.45	.51
B	Chrysothamnus viscidiflorus lanceolatus	16	12	.18	.25
B	Eriogonum corymbosum	56	45	2.43	2.29
B	Eriogonum microthecum	0	0	-	.01
B	Gutierrezia sarothrae	25	11	.08	.18
B	Juniperus osteosperma	0	4	.18	.63
B	Pinus edulis	0	5	1.02	4.74
B	Symphoricarpos oreophilus	11	10	.62	.28
B	Tetradymia canescens	8	8	.15	.15
Total for Browse		173	134	7.07	10.07

CANOPY COVER --
Herd unit 17 , Study no: 54

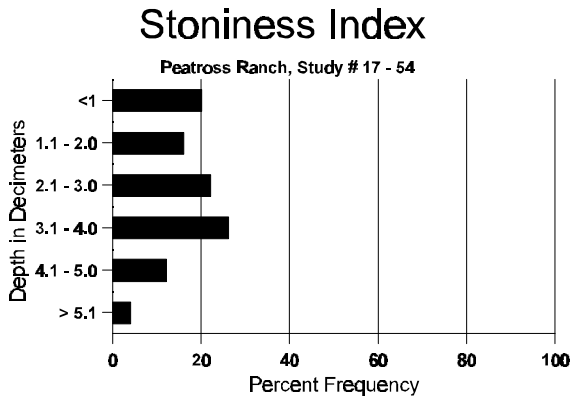
Species	Percent Cover '00
Juniperus osteosperma	20
Pinus edulis	12

BASIC COVER --
Herd unit 17 , Study no: 54

Cover Type	Nested Frequency		Average Cover %			
	'95	'00	'82	'88	'95	'00
Vegetation	316	345	12.25	10.25	21.96	28.42
Rock	265	246	4.00	6.25	12.46	14.16
Pavement	213	332	36.00	28.75	4.46	15.64
Litter	393	437	35.50	36.75	43.56	49.51
Cryptogams	10	-	.75	2.00	.53	0
Bare Ground	251	281	11.50	16.00	14.36	19.79

SOIL ANALYSIS DATA --
Herd Unit 17, Study # 54, Study Name: Peatross Ranch

Effective rooting depth (inches)	Temp °F (depth)	pH	%sand	%silt	%clay	%0M	PPM P	PPM K	dS/m
17.21	57.4 (17.17)	7.2	31.3	36.2	32.6	3.9	2.1	140.8	0.9



PELLET GROUP FREQUENCY --
Herd unit 17 , Study no: 54

Type	Quadrat Frequency		Pellet Transect	
			Pellet Groups per Acre	Days Use per Acre (ha)
	'95	'00	'00	'00
Rabbit	8	7	26	N/A
Elk	2	1	9	1 (2)
Deer	35	22	157	12 (30)
Cattle	1	1	235	20 (48)

BROWSE CHARACTERISTICS --
Herd unit 17 , Study no: 54

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Artemisia tridentata vaseyana																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	14	8	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor
'82	00%	00%	00%
'88	00%	00%	00%
'95	00%	00%	00%
'00	00%	00%	00%

%Change

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	0	Dec:	-
	'88	0		-
	'95	20		-
	'00	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Cercocarpus montanus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	82	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	88	3	3	19	-	-	-	-	-	-	24	-	1	-	1666			25
	95	2	-	1	-	-	-	-	-	-	3	-	-	-	60			3
	00	3	4	-	-	-	-	-	-	-	6	1	-	-	140			7
M	82	-	8	5	-	-	-	-	-	-	6	7	-	-	866	22	18	13
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	2	13	27	-	-	-	-	-	-	40	-	2	-	840	18	24	42
	00	7	5	25	-	-	11	-	-	-	46	1	1	-	960	24	27	48
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	1	-	-	-	1	-	-	-	20			1
	00	-	1	-	-	-	-	-	-	-	1	-	-	-	20			1
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	53%	33%	00%	+40%
'88	12%	76%	04%	-45%
'95	28%	63%	04%	+18%
'00	18%	64%	02%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	999	Dec:		0%
'88	1666			0%
'95	920			2%
'00	1120			2%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Chrysothamnus depressus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	62	-	-	2	-	-	-	-	-	64	-	-	-	1280	6	6	64
	00	31	-	-	-	-	-	-	-	-	31	-	-	-	620	7	7	31

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	00%	00%	-52%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	0	Dec:	-
	'88	0		-
	'95	1320		-
	'00	640		-

Chrysothamnus viscidiflorus lanceolatus																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	95	6	-	-	-	-	-	-	-	-	6	-	-	-	120			6
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	28	-	-	-	-	-	-	-	-	28	-	-	-	560	11	9	28
	00	15	-	-	-	-	-	-	-	-	14	-	1	-	300	8	7	15
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	+81%
'95	00%	00%	00%	-51%
'00	00%	00%	06%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	0	Dec:	0%
	'88	133		0%
	'95	700		3%
	'00	340		0%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Eriogonum corymbosum																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	95	5	-	-	-	-	-	-	-	-	5	-	-	-	100			5
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	16	-	-	-	-	-	-	-	-	13	-	3	-	1066			16
	95	20	-	-	1	-	-	-	-	-	21	-	-	-	420			21
	00	42	-	-	-	-	-	-	-	-	42	-	-	-	840			42
M	82	38	-	-	-	-	-	-	-	-	38	-	-	-	2533	16	12	38
	88	19	-	-	-	-	-	-	-	-	18	-	1	-	1266	13	9	19
	95	82	1	-	1	-	-	-	-	-	84	-	-	-	1680	14	18	84
	00	40	3	-	-	2	-	-	-	-	45	-	-	-	900	16	16	45
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
	00	36	-	4	-	-	-	-	-	-	29	-	1	10	800			40
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	40			2
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	- 3%
'88	00%	00%	11%	-13%
'95	.93%	00%	00%	+16%
'00	04%	03%	09%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	2533	Dec:	0%
	'88	2465		5%
	'95	2140		2%
	'00	2540		31%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Gutierrezia sarothrae																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	4	-	-	-	-	-	-	-	-	4	-	-	-	80			4
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	5	-	-	-	-	-	-	-	-	5	-	-	-	333			5
	95	21	-	-	-	-	-	-	-	-	21	-	-	-	420			21
	00	2	-	-	-	-	-	-	-	-	-	2	-	-	40			2
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	30	-	1	-	-	-	-	-	-	31	-	-	-	2066	8	6	31
	95	21	-	-	-	-	-	-	-	-	21	-	-	-	420	8	6	21
	00	35	-	-	-	-	-	-	-	-	35	-	-	-	700	7	6	35
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	03%	00%	-65%
'95	00%	00%	00%	- 9%
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	0	Dec:	0%
	'88	2465		3%
	'95	860		2%
	'00	780		5%

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Juniperus osteosperma																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
Y	82	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	88	2	1	-	-	-	-	-	-	-	3	-	-	-	200			3
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	82	9	-	-	-	-	-	-	-	-	9	-	-	-	600	50	30	9
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	2	-	-	-	-	-	-	1	-	3	-	-	-	60	-	-	3
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	66			1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	-60%
'88	25%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	666	Dec:		0%
'88	266			25%
'95	0			0%
'00	80			0%

Juniperus scopulorum																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	2	-	-	-	-	-	-	-	-	2	-	-	-	133			2
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	3	-	-	-	-	-	-	-	-	3	-	-	-	200			3
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	2	-	-	1	-	-	3	-	-	-	200	96	43	3
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	0	Dec:		-
'88	400			-
'95	0			-
'00	0			-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Pinus edulis																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	3	-	-	-	-	-	-	-	-	1	-	2	-	200			3
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	7	-	-	-	-	-	-	-	-	7	-	-	-	140			7
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	4	-	-	-	-	-	-	-	-	4	-	-	-	266			4
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	8	-	-	-	-	-	-	-	-	8	-	-	-	160			8
M	82	3	-	-	-	-	-	-	-	-	3	-	-	-	200	16	6	3
	88	-	-	-	-	-	-	1	-	-	1	-	-	-	66	217	118	1
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	+40%
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	200	Dec:	-
	'88	332		-
	'95	0		-
	'00	160		-

Pseudotsuga menziesii

S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	00%	00%	00%	
'00	00%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)				
	'82	0	Dec:	-
	'88	0		-
	'95	0		-
	'00	0		-

AGE	YR	Form Class (No. of Plants) 1	2	3	4	5	6	7	8	9	Vigor Class 1	2	3	4	Plants Per Acre	Average (inches) Ht.	Cr.	Total
Symphoricarpos oreophilus																		
Y	82	5	-	-	-	-	-	-	-	-	5	-	-	-	333			5
	88	9	1	-	-	-	-	-	-	-	6	-	4	-	666			10
	95	28	-	-	-	-	-	-	-	-	28	-	-	-	560			28
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40			2
M	82	2	-	-	-	-	-	-	-	-	2	-	-	-	133	7	9	2
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	30	-	-	-	-	-	-	-	-	30	-	-	-	600	9	15	30
	00	34	1	-	-	-	-	-	-	-	35	-	-	-	700	14	14	35
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	1	-	-	-	-	-	-	-	-	-	-	-	1	20			1

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	+30%
'88	10%	00%	40%	+43%
'95	00%	00%	00%	-34%
'00	03%	00%	03%	

Total Plants/Acre (excluding Dead & Seedlings)				
'82	466	Dec:		0%
'88	666			0%
'95	1160			0%
'00	760			3%

Tetradymia canescens																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20			1
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0
	95	7	3	-	-	-	-	-	-	-	10	-	-	-	200	9	9	10
	00	7	-	-	-	-	-	-	-	-	7	-	-	-	140	10	8	7
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0			0
	00	2	1	-	-	-	-	-	-	-	3	-	-	-	60			3

% Plants Showing	Moderate Use	Heavy Use	Poor Vigor	%Change
'82	00%	00%	00%	
'88	00%	00%	00%	
'95	30%	00%	00%	+ 9%
'00	09%	00%	00%	

Total Plants/Acre (excluding Dead & Seedlings)			
'82	0	Dec:	0%
'88	0		0%
'95	200		0%
'00	220		27%